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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/775,012	02/09/2004	Scott J. Daly	SCK7146.0185	2532

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EXAMINER

BLACKMAN, ANTHONY J

ART UNIT	PAPER NUMBER
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2676

DATE MAILED: 10/21/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/775,012

Applicant(s)

DALY ET AL.

Examiner

ANTHONY J. BLACKMAN

Art Unit

2676

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 09 February 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-8 is/are pending in the application.
- 4a) Of the above claim(s) 4-8 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☒ Claim(s) 4-8 are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>2/9/04</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Election/Restrictions

1. Restriction to one of the following inventions is required under 35 U.S.C. 121:
 - I. Claims 1-3, drawn to a method for creating a dither pattern structure with spatial and temporal frequency bounds defining a high-pass pattern configuration, classified in class 345, subclass 596.
 - II. Claims 4-7, drawn to adaptive processing of a digital image using dither pattern tiles comprising a first and second array, classified in class 358, subclass 3.13.
 - III. Claim 8, drawn to an image processing device with an image storing means for storing an image to be displayed of dither pattern tiles, classified in class 358, subclass 3.18.
2. Inventions I, II, and III are related as combination and subcombination. Inventions in this relationship are distinct if it can be shown that
 - (1) the combination as claimed does not require the particulars of the subcombination as claimed for patentability, and
 - (2) that the subcombination has utility by itself or in other combinations (MPEP 806.05 (c)). In the instant case, the combination as claimed does not require the particulars of the subcombination as claimed because Group I discloses a dither pattern structure with spatial; and temporal frequency bounds defining a high-pass configuration. The subcombination of Group IV has separate utility,

Art Unit: 2676

because Group IV discloses an image processing device with dithering means including image storage for storing an image to be displayed.

Further still, the subcombination of Group II has separate utility due to the adaptive processing involving the selection of the first and second arrays, wherein, the first and second array are selected or among the first and second array are selected.

3. Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, restriction for examination purposes as indicated is proper.

4. Because these inventions are distinct for the reasons given above and have acquired a separate status in the art because of their recognized divergent subject matter, restriction for examination purposes as indicated is proper.

5. Applicant is advised that the reply to this requirement to be complete must include an election of the invention to be examined even though the requirement be traversed (37 CFR 1.143).

6. During a telephone conversation with Scott Krieger on 10/14/2005, a provisional election was made without traverse to prosecute the invention of Group I, claims 1-3. Affirmation of this election must be made by applicant in replying to this Office action. Claims 4-8 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 1-3 are rejected under 35 U.S.C. 103(a) as being unpatentable over CARSON, US Patent No. 4,675,532 in view of WANG, US Patent no. 6,281,942.

9. As per claim 1, examiner interprets CARSON to disclose the following features as the recited claim language, A method for creating a dither pattern structure (col 7, lines 41-61), said method comprising:

- a. establishing a first multi-dimensional array of dither pattern tiles, said array comprising a first upper horizontal spatial frequency bound, a first lower horizontal frequency bound, a first upper vertical spatial frequency bound, a first lower vertical spatial frequency bound, a first upper temporal frequency bound and a first lower temporal frequency bound (please see figure 2 for elements 32, 22, 24 34 38 and 40, beginning with pixel data I-I and pixel data I-n representing the first array);
- b. wherein said spatial frequency bounds and said temporal frequency bounds define a high-pass pattern configuration (fig 2, element 34 represents the high-pass filter);
- c. establishing a second multi-dimensional array of dither pattern tiles, said array comprising a second upper horizontal spatial frequency

Art Unit: 2676

bound, a second lower horizontal frequency bound, a second upper vertical spatial frequency bound, a second lower vertical spatial frequency bound, a second upper temporal frequency bound and a second lower temporal frequency bound (please see figure 2 for elements 32, 22, 24 34 38 and 40, beginning with pixel data nd – l and pixel data nd-nf representing the second);

e. associating said first multi-dimensional array of dither pattern tiles with a first range of image characteristic values (see fig 2 for both pixel data l-l and l-n);and

f. associating said second multi-dimensional array of dither pattern tiles with a second range of image characteristic values.(see fig 2 for both pixel data nd-l and nd-nf), however, does not expressly teach section d. wherein said second lower temporal frequency bound is lower than said first lower temporal frequency bound because the band-pass filters/temporal filters are not compared to any (lower)temporal threshold. WANG, on the other hand teaches temporal threshold levels in figs. 8-10 to meet the above feature not expressly taught by CARSON. It would have been obvious to one skilled in the art at the time of the invention to use the temporal threshold teachings associated with spatial and temporal filtering of WANG to modify the temporal and spatial; filtering photodetector processing of CARSON because the addition of WANG provides greater capacity for filtering provides "video image clarity (col 11, line 67). Therefore, it would have been obvious for CARSON to be modified by WANG.

Art Unit: 2676

10. As per claim 2, CARSON as modified by WANG meets limitations of claim 1, including wherein said image characteristic values comprise luminance values (see fig 2 pixel data inputs).

11. As per claim 3, CARSON as modified by WANG meets limitations of claim 1, including wherein said image characteristic values comprise localized average luminance values (see fig 2 pixel data inputs).

Conclusion

12. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. LUBIN, US Patent No. 5,909,516.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ANTHONY J. BLACKMAN whose telephone number is 571-272-7779.

The examiner can normally be reached on FLEX SCHEDULE.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, MATTHEW BELLA can be reached on 571-272-7778.

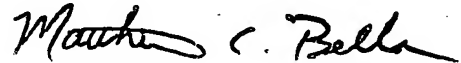
The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2676

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



ANTHONY J BLACKMAN
Examiner
Art Unit 2676



MATTHEW C. BELLA
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